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Biotechnology Notes

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Biotechnology Notes, a compilation of agency activities, news events, and upcoming meetings, is prepared for members of the U.S. Department of Agriculture's (USDA) Committee on Biotechnology in Agriculture (CBA) by USDA's Office of Agricultural Biotechnology (OAB).

INSIDE USDA

MINNEAPOLIS GROUP TACKLES FISH STANDARDS

About 100 scientists attended a workshop in Minneapolis, MN, August 18-20, to develop performance standards for safely conducting research with genetically modified fish and shellfish. The workshop was sponsored by USDA, the Minnesota Legislature, and the Minnesota Sea Grant Program.

Workshop participants split into three groups to discuss: 1) the spread of introduced traits through fish and shellfish populations; 2) the structure, function, and resiliency of ecosystems into which organisms can disperse; and 3) managing risk (facilities, operations, and staff).

Some participants were concerned that the standards would become mandatory, citing a bill in Congress which refers to them. According to a staff member of the U.S. House of Representatives' Committee on Merchant Marines and Fisheries, the standards were cited in the bill to address environmental concerns related to marine biotechnology.

A Working Group on Aquatic Biotechnology and Environmental Safety, which reports to USDA's Agricultural Biotechnology Research Advisory Committee (ABRAC), will use the workshops's recommendations to revise the standards. Written comments mailed in by those unable to attend will also be considered. The next public discussion of the performance standards will be at the ABRAC meeting in Washington, DC, December 16-17, 1993.

CALGENE SEEKS NEW STATUS FOR MODIFIED COTTON; APHIS SEEKS PUBLIC COMMENTS

Calgene, Inc. of Davis, CA submitted a petition to USDA's Animal and Plant Health Inspection Service (APHIS) asking that its herbicide tolerant cotton, known as "BXN," no longer be considered a regulated article because, according to Calgene, the cotton does

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not pose a plant pest risk. It has been studied in 15 field trials conducted around the country.

APHIS is asking the public to submit any comments to the petition by November 8, 1993. To receive a copy of the petition entitled "Petition for Determination of Nonregulated Status Under 7CFR Part 340: BXN Cotton," please call Kay Peterson at 301-436-7601. For more information, call Michael Schechtman at the same phone number.

REVIEWING BIOTECHNOLOGY, CHINESE STYLE

A team of USDA scientists is currently visiting several laboratories and experiment stations in China to evaluate the development of plant biotechnology, to exchange information, and to assess the implications for international trade.

The team includes J. Neil Rutger, a rice geneticist with the Agricultural Research Service (ARS) in Stoneville, MS; Donald Kaufman, a soil microbiologist with ARS in Kutztown, PA; Sue Tolin, a plant virologist with the Cooperative State Research Service and Virginia Polytechnic Institute and State University in Blacksburg, VA; Martha Steinbock, international affairs specialist in the Office of Agricultural Biotechnology (OAB); and team leader Alvin Young, OAB Director. The visit includes stops at research centers in Beijing, Shanghai, Nanjing, Wuhan, Hainan, and Hong Kong.

NEWS AROUND THE NATION (AND THE WORLD)

BIOTECH COMES TO THE VINEYARD

At a July 22 meeting of the American Institute of Wine and Food in San Francisco, CA, scientists discussed ways in which biotechnology is helping to solve disease problems in grapes. Biotechnology has already resulted in improved diagnostic kits for diagnosing grape diseases. Some of the diseases can now be pinpointed in hours instead of years using traditional laboratory practices. Monoclonal and polyclonal detection methods have also made it possible to invent a test to identify the causal bacterial agent for crown gall disease. Researchers have also started to sequence the chromosomes of yeasts that are used in grape fermentations.

BIO LAUNCHES EDUCATION INITIATIVE

The Biotechnology Industry Organization's (BIO) communications committee kicked off a national effort on September 21 to help educate students and teachers in

biotechnology. The committee unveiled a new videotape called "Biotechnology, The Choice for Your Future" as well as a resource guide that describes entry-level jobs and an education kit that will be sent to 500 high school guidance counselors around the country. Other projects in the pipeline include an essay contest and a national biotechnology week event.

The Pennsylvania Biotechnology Association presented a series of colorful, easy-to-read booklets entitled *Your World/Our World: Biotechnology and You*. The booklets explain how biotechnology is used to solve real world problems. The series can be ordered by writing to the Pennsylvania Biotechnology Association, 1524 W. College Ave., Suite 206, State College, PA 16801.

TAKING THE STRESS OUT OF GROWTH

Disease, insects, ultraviolet light -- each of these agents can stress a tree, even to the point of death. Yet some trees seem to tolerate stress with little apparent damage. Why?

At the Forest Service's North Central Forest Experiment Station in Rhinelander, WI, researchers believe the answer may lie in the genes. To test their hypothesis, they deliberately induced stress in a poplar tree by wounding a leaf with a pair of pliers.

The tree wasted no time in producing an enzyme called chitinase at the site of the wound. Chitinase may be responsible for fighting off those insects that come to feast on open wounds. The enzyme is thought to ward off infections by damaging the cells of invading fungi and the stomachs of feeding insects. In other experiments, the same scientists have shown that certain trees respond to ultraviolet light by producing enzymes that catalyze the formation of protective compounds.

If further research proves that some trees are genetically immune to environmental stresses, then scientists hope they will be able to select those genes that confer the protection and perhaps move them to trees that are less hardy. For more details about this research, please call Don Riemenschneider, research plant geneticist at the Rhinelander, Wisconsin laboratory at 715-362-7474.

A DEBATE ON TAPE

A new videotape is now available called "The Biotechnology Debate: Labeling of Genetically Engineered Foods." The tape captures an exchange between Margaret Mellon, a policy analyst and attorney with the Union of Concerned Scientists in Washington, DC and David Kline, a philosopher at the State University of New York in New Paltz, NY and the current chair of USDA's ABRAC. It can be ordered for \$10, which

includes shipping and handling from Jim Trow, Publications Distribution, 119 Printing and Publications Bldg., Iowa State University, Ames, IA 50010. Specify tape number 75758.

IN SEARCH OF THE PERFECT MATE

For years poultry breeders have relied on their eyes as well as computer analyses to pick out the best birds to mate hoping such a union will result in good reproductive performance. Now scientists at Iowa State University are using a more scientific approach -- DNA fingerprints -- to determine which chickens carry the most desirable genes.

The Iowa State team, in collaboration with researchers at Hy-Line International, Dallas Center, is developing a rapid, low-cost method used to locate areas of DNA, called genetic markers, that are linked to important traits. By locating the markers, scientists can more accurately identify the genes that control the desired trait. For more details about this research, please call Susan J. Lamont, professor of animal science at Iowa State University at 515-294-4100.

THE WINDS OF CHANGE: ARI ANNUAL MEETING

The 42nd Annual Meeting of the Agricultural Research Institute (ARI), subtitled "The Winds of Change," took place September 16-17 in McLean, VA. Among the speakers was Secretary of Agriculture Mike Espy, who talked about USDA's agriculture research agenda.

George Bird of Michigan State University's department of entomology presented his concept of a 21st century diversified farm. Bird recently completed an assignment as Director of the Sustainable Agriculture Research and Education program that was mandated in the 1990 Farm Bill. He predicted that future farms will probably be part-time operations, use organic agriculture, and make heavy use of ecology, systems science, and alternative futures analyses.

Another point of view was given by Dennis Avery, Director of the Hudson Institute Center for Global Food Issues in Churchville, Va. Avery said, "A global commitment to organic farming would be a massive threat to both humanity and wildlife." He said low productivity leads to famine which leads to people plowing down wildlife habitat. "High yield farming is the only visible strategy for meeting that challenge," said Avery. He went on to say that farm chemicals don't threaten wildlife when properly used. He said the challenge for the future is to triple the output of the natural resources in farming between now and the year 2050, while reducing the environmental impact of food production.

CATHOLIC UNIVERSITY OFFERS WINTER COURSES

The Catholic University of America's Center for Advanced Training in Cell and Molecular Biology is offering courses in recombinant DNA methodology, animal and tissue culture, PCR techniques, and receptor binding techniques beginning January 1994. All courses will be conducted in Washington, DC. For details call 202-319-6161; Fax: 202-319-4467.

TEACHERS TAKE NOTE

You will soon be able to participate in a biotechnology training exercise that will be beamed by satellite October 20, 27, and November 3 from 3:30-5:30 p.m. Central Time. The program was sponsored by the University of Wisconsin Biotechnology Center and includes 6 hours of training, videotaping rights and written materials, and a five-page resource guide. For more information on costs and registration, please call the Satellite Educational Resources Consortium at 1-800-476-5001.

IN CASE YOU WEREN'T THERE

■ OAB regulatory specialist MaryIn Cordle spoke about Federal oversight of aquatic animal biotechnology at a symposium on aquaculture and public policy at Woods Hole, MA, August 30. She said the Federal emphasis on aquaculture recognizes a need to meet consumer demand for high quality seafood without depleting natural resources. Other benefits would include a reduction of U.S. reliance on imported seafood, the creation of new jobs, and the integration of aquaculture into coastal zone management.

She said the Federal government does not currently have a clear policy regarding oversight of aquatic animal biotechnology, but is taking steps to remedy the situation. Cordle added that regulatory uncertainty is a disincentive to venture capital investment and research in this area.

She added that biotechnology offers new tools for introducing traits to improve food quality, yield, and resistance to disease and other stress factors.

NEW PUBLICATIONS

■ "Impact of Herbicide-Tolerant Crops on the Seeds and Crop Protection Chemicals Industries." Published by The Bowditch Group Inc., 179 South Street, Boston, MA 02111-2729. Telephone 617-426-6161; Fax: 617-426-6111.

- "Biotechnology Education Inventory: Representative Activities Nationwide" describes 41 projects and activities underway to educate, train, and inform people about biotechnology. To order call 202-234-3330.

- "Careers in Biotechnology" gives an overview of careers, the kinds of jobs available, educational and training requirements, and typical starting salaries. Call Corinthia Scurlock at the North Carolina Biotechnology Center at 919-541-9366 to order a free copy.

- "Aquaculture: A Guide to Federal Government Programs." Revised August 1992. Prepared by the Joint Subcommittee on Aquaculture, in cooperation with USDA's National Agricultural Library. To order a copy, please call 301-504-5558; Fax: 301-504-5472.

- *The European Biotechnology Directory: 1991.* For details about ordering a copy, please send a fax to Marc Cantley in Brussels at 32-2235-5365.

- *Biotechnology for the 21st Century: Realizing the Promise.* A report by the Committee on Life Sciences and Health of the Federal Coordinating Council for Science, Engineering, and Technology. June 30, 1993. Requests for copies may be mailed to the Office of Recombinant DNA Activities, Bldg. 31, Room 4B11, National Institutes of Health, Bethesda, MD 20892.

- *National Animal Genome Research Program Newsletter.* Published bi-annually by USDA and the Illinois Agricultural Experiment Station. To receive a copy, call 217-333-5998; Fax: 217-244-5617; Internet: Lewinh@uiuc.edu.

- Proceedings are now available from the June 28-29 conference, "Symbol, Substance, and Science: The Societal Issues of Food Biotechnology," held in Research Triangle Park, NC. For details call 919-541-9366

- *Transgenic Animal Working Group.* Minutes of USDA's ABRAC meeting. To receive a complimentary copy, please call OAB at 703-235-4419; Fax: 703-235-4429.

- "Biotechnology Applied to the Diagnosis of Animal Diseases: A Scientific and Technological Revue". Prepared by the International Office of Epizootics. June 1993. For details about ordering a copy, please call OIE in Paris at 33-1-4415-1888; Fax: 33-1-4267-0987.

UPCOMING MEETINGS

Oct. 15: "Biotechnology and the Food Supply: Regulatory and Labeling Challenges for the New Administration." Washington, DC. A workshop sponsored by USDA and Public Voice. For details send a fax to 202-659-3683.

Oct. 21: "Regulations and Strategies in Approval of Biotechnology Products" and "Meeting FDA's GLP and GMP Compliance Standards" are two lectures that will be held at the National Institute of Standards and Technology in Gaithersburg, MD. The talks are sponsored by the Montgomery County, Maryland Technology Council. To register, please call 301-258-5005.

Nov. 1-2: 1993 Annual Technology Transfer Conference. Atlanta, GA. Sponsored by the Federal Laboratory Consortium. For details call 615-366-0679; Fax: 615-366-0695.

Nov. 1-3: "The Consortium for Plant Biotechnology Research: 1993 Symposium" Chicago, IL. Sponsored by USDA. For details write to the Consortium (formerly the Midwest Plant Biotechnology Consortium) at 1220 Potter Drive, Suite 130-D, West Lafayette, IN 47906 or call 317-494-9334.

Nov. 8-9: A conference entitled "Transgenic Plant Pesticides Biotechnology Genetics." For details write to CEEM Inc., 10521 Braddock Rd., Fairfax, Va 22032; or call 1-800-745-5565.

Dec. 16-17: Meeting of USDA's ABRAC. Washington, DC. For more details call OAB at 703-235-4419; Fax: 703-235-4429.

Jan. 24-27: International Plant Genome II Conference. San Diego, CA. For details call 212-643-1750.

Feb. 7-11: "International Conference on Comparative Gene Mapping in Terrestrial and Aquatic Vertebrates. Oslo, Norway. For details write to the Norwegian College of Veterinary Medicine, Department of Animal Genetics, Att. Oystein Lie, Box 8146, Dep., N-0033 Oslo, Norway.

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